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EDUCATIONAL COMMUNICATION SERVICES AS A FIELD OF GRADUATE STUDY AND RESEARCH.

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GUIDELINES WERE DEVELOPED FOR NEW PROGRAMS OF GRADUATE STUDY LEADING TO PROFESSIONAL CAREERS IN THE PLANNING, OPERATION, AND ADMINISTRATION OF EDUCATIONAL MEDIA SERVICES IN SCHOOLS AND COLLEGES. SPECIFIC CONSIDERATIONS WERE GIVEN TO (1) METHODS FOR ACHIEVING MORE INDEPENDENT STUDENT EFFORT, (2) TUTORIAL APPROACH FOR ADVANCED WORK, (3) STUDENT PARTICIPATION IN RESEARCH AND FIELD EXPERIMENTATION, (4) PLANNING AND TEAM TEACHING, AND (5) IMPROVED SEQUENCING OF COURSE INSTRUCTION. THE PROJECT WAS CONDUCTED IN THE FOLLOWING STAGES--(1) GATHERING DATA FROM LITERATURE, FIELD VISITS, AND INTERVIEWS, (2) EMPLOYING CONSULTANTS TO ASSIST IN SPECIFIC CURRICULAR RECOMMENDATIONS, (3) CONSIDERING FACILITIES WHICH MIGHT SUPPORT THE DEVISED PROGRAMS, AND (4) DEVELOPING AND TESTING NEW INSTRUCTIONAL RESOURCES AND METHODS. THE PROJECT RESULTED IN (1) PUBLICATION OF AN EDUCATIONAL PROGRAM FOR MEDIA SPECIALISTS WITH VARIOUS INTERESTS, (2) A NEW PROGRAM OF GRADUATE STUDY IN EDUCATIONAL COMMUNICATION, (3) A SET OF NEW INSTRUCTIONAL MATERIALS FOR PROFESSIONAL STUDENTS, (4) A NEW INSTRUCTIONAL PROGRAM WITHIN THE GRADUATE SCHOOL OF LIBRARY AND INFORMATION SCIENCES, AND (5) A SET OF PLANS FOR A NEW BUILDING TO HOUSE A COLLEGE OF EDUCATIONAL COMMUNICATION AND INFORMATION SCIENCES. A SERIES OF RECOMMENDATIONS WERE DISCUSSED. (RS)

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EDUCATIONAL COMMUNICATION SERVICES

Development of Guidelines for New Programs of Graduate Study and Research Leading to Professional Careers in the Planning, Operations and Administration of Educational Media Services (in Schools and Colleges), FINAL REPORT

This report was not published by OE, but by the University of Pittsburgh, Pittsburgh, Pa. in 1964. Copies may be purchased by writing U Pitt.

UNIVERSITY OF PITTSBURGH

Graduate School of Library and Information Sciences

Center for...Media Studies

1965

C E N T E R F O R L I B R A R Y A N D E D U C A T I O N A L M E D I A S T U D I E S

Report Number 1 903-2

E D U C A T I O N A L C O M M U N I C A T I O N S E R V I C E S

As a Field of Graduate Study and Research

UNIVERSITY OF PITTSBURGH

The Graduate School of
Library and Information Sciences

Center for...Media Studies

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FINAL PROJECT REPORT

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I N T R O D U C T I O N

On February 19, 1963 the University of Pittsburgh was awarded a contract under authority set forth in Part B of Title VII of the National Defense Education Act. This contract called for "Development of Guidelines for New Programs of Graduate Study Leading to Professional Careers in the Planning, Operations and Administration of Educational Media Services (in Schools and Colleges)."

The contract as awarded also called for a definition of requirements for provision of supplementary training which might be needed by teachers, school and college administrators, and others having special--but perhaps more limited--need than would media specialists for knowledge of learning resources and their use.

Responsibility for organization and management of the project was assigned to the staff of the Center for Library and Educational Media Studies. Development and adherence to the philosophy of the project and the preparation and editing of project reports were assumed by Dr. C. Walter Stone, Director of the Center for Library and Educational Media Studies. Project Co-Directors were Professor Harold Lancour, Dean of the Graduate School of Library and Information Sciences at the University of Pittsburgh, and Dr. Maurice L. Cogan, Chairman of the Teacher Education Department in the School of Education.

The main concerns of project work were as follows:

Graduate professional education in the field of educational communication and information services hasn't yet achieved maturity. While a measure of consensus does exist in the field on what constitutes a profession, there is no full agreement regarding either the number of kinds of professional jobs for which professional training should be provided for media service work in schools and colleges, or the instructional methods which should be used. Furthermore, changes in the field have led to a situation where "professional" job definitions have become increasingly blurred as, indeed, have the "jurisdictional" lines of responsibility drawn between media service agencies.

A similar blurring is evident in related professional education in the twenty or more universities in the United States which currently employ a communications label to denote interdisciplinary approaches to educational media. There is little consistency in their organization of media service or in patterns of education. The degrees they award are based on differing academic approaches; there is little agreement on what supporting studies should be considered prerequisite; and there is little or no agreement on details of course content, methods of presentation, learning responsibilities of students and the like. To put it in terms of

professional school administration, specialized training for educational media service responsibilities is divided generally among a number of colleges and curricula having such variant labels as: Audiovisual education; library science; radio and television; speech and theater arts; journalism; fine arts; communications; public communication; public opinion; editing and publishing; mass communication; documentation; information storage and retrieval; data processing; and advertising and public relations.

This final project report should be read simply as a preface to the larger companion volume entitled The Professional Education of Media Service Personnel. The companion volume represents the chief yield of the study and includes a rationale which underlies all specific curricular recommendations. The volume was issued as a service to the profession in advance of completing other work on the project. The papers which it brings together meet long-standing needs for definition of the field as a whole and of component areas of work. Each author represented in the publication is nationally known in his own field of specialization; therefore each chapter speaks for itself eloquently.

The Professional Education of Media Service Personnel does not propose a single program or type of instruction. Instead, it discusses training for major careers in educational communication in terms of existing curricular needs and states the degrees of similarity and difference which should or do exist in learning requirements among various areas of professional interest in educational communication.

Finally, it sets forth a new rationale for guiding educational communication planning activity.

In view of information presented in The Professional Education of Media Service Personnel, this final report recalls only in brief terms a definition of project aims, a review of procedures and significant results. It offers general recommendations for immediate steps which might be taken in the field to benefit development of work in educational communications generally. Several appendices refer to specific aspects of work completed under terms of the project contract. A budget summary also is appended.

I

Project Aims, Procedures and Results

The project reported was conceived originally as part of a more general and continuing effort to study the educational requirements of the communication and information service professions. In planning the study, it was anticipated that some attention be given to a need long recognized by school and college personnel for approved graduate methods of instruction generally and for major curricular innovations. In drafting plans for the study it was anticipated that specific consideration be given to: (1) methods for achieving more independent student effort, (2) a tutorial approach to advanced work, (3) increased participation of students in research and field experimentation, (4) a greater amount of faculty planning and team teaching in major areas of professional content and (5) an improved sequencing of course instruction considering subject matter importance and learning requirements.

Also taken into account in planning the study was the fact that each major professional organization and association currently involved in the educational communication and information service area has itself in recent years given much attention to problems associated with the recruitment and training of personnel. During the past decade, and especially since passage of the National Defense Education Act in 1958, a very large number of special courses, seminars, workshops and institutes have been conducted under auspices of various professional organizations and institutions in efforts to help clarify future roles and requirements for librarians, audiovisual personnel and other media specialists. A number of special training programs have been developed to meet the growing needs for personnel culminating in present plans for conducting more than 50 institutes to train school librarians and educational media specialists supported by funds from the United States Office of Education.

In accepting responsibility for the project, it was understood that necessary investigations would be scheduled to identify and review all major programs and studies completed or in progress which might yield pertinent information and offer assistance in planning the study.

Procedures Followed

In acknowledging responsibility for administation of the project, the University of Pittsburgh agreed to develop plans for offering a new program of graduate professional education designed to help prepare individuals to accept professional careers in the planning, operations and administration of media services maintained by schools and colleges. It was understood that the program would be designed to offer some supplementary training for teachers, school and college administrators and others requiring special, but more limited, knowledge of learning resources and their use. From the outset the program was to be cooperatively administered within the division of Social Professions at the University of Pittsburgh and was to be developed and publicized so that it would provide useful information for other educational institutions also wishing to develop new programs of professional study in the field of educational communication.

In meeting terms set forth in the original contract, the project was conducted in four main stages: (1) Gathering pertinent information from the literature, field visits and interviews; (2) employing qualified consultants to assist in determining priorities for development of specific curricular recommendations; (3) a limited consideration of facilities which might support the type of program devised; and (4) development and experimental testing of some new instructional resources and methods which might ultimately be used to carry forward the educational program proposed. Although completion of various stages of work overlapped, in a general way actual management of the project followed basic plans set forth in Appendix A of the original contract. The chief results of work completed are stated below.

Results of the Project

Five main products have resulted to date from work associated with the project. The first and most significant result is the publication issued in advance of project completion entitled The Professional Education of Media Service Personnel. This publication summarizes in behavioral terms the educational program considered desirable for media specialists who are interested in the management of audiovisual services, school librarianship, educational broadcasting or instructional technology. It also presents a number of general recommendations for the development of training programs for preparing media specialists "in the round." The publication is unique; it has received national distribution and is enjoying favorable reviews.*

A second major result of work completed is the design, development, approval and current implementation of a new program of graduate study in educational communication at the University of Pittsburgh. (For an initial outline of this program see Appendix A.)

The Educational Communication Program is managed by the School of Education in cooperation with the Graduate School of Library and Information Sciences. Drawing from various sectors of the University, the program provides opportunity for study at the Master's level and for an Advanced Certificate or Ph.D. for those having an appropriate background and necessary teaching credentials. In future years, the program should provide training in specialized production techniques associated with various types of AV media, graphic aids, motion pictures, programed learning materials, educational broadcasting and design of instructional systems and materials for teaching reading skills. Some attention will also be given to training technologists at the junior college and lower division level and to expanding the Master's program. An undergraduate degree in educational communication awarded jointly by several cooperating colleges and schools within the University might be considered.

* Copies of The Professional Education of Media Service Personnel have been forwarded under separate cover.

Basic planning of the new program was completed by a University committee working under Dr. C. Walter Stone, professor of Library Science and Education and Director of the Center for Library and Educational Media Studies. Members of the committee included: Dr. Robert Glaser, Director of Research and Development--Learning Research and Development Center; Mr. Ivan G. Hosaxk, Director of the Regional Instructional Materials Center, Allegheny County Schools; and Mr. Allen Kent, Director of the Knowledge Availability Systems Center.

The interdisciplinary nature of the Educational Communication Program draws upon University resources which include the Learning Research and Development Center, the Knowledge Availability Systems Center, and the Center for Library and Educational Media Studies. It was also planned that the new Program would relate actively to existing service, training and research supported copperatively by the School of Education and the Allegheny County School System and managed by Mr. Ivan G. Hosack, Director of the Instructional Materials Center--Allegheny County Schools and adjunct lecturer in the School of Education.

A third major result of work completed is the planning and development of new instructional materials to be used in presenting the content of educational communication studies to professional students. In developing these materials, it was agreed that major emphasis would be given to materials needed to support related studies offered by the Graduate School of Library and Information Sciences, a new school and one ready to try out immediately the results of project work.

Among tangible aids produced to date (one copy or print of each item available in finished form will be forwarded to the Office of Education as contracted) are the following:

1. Videotape and Kinescope -- "Codes and Notations" (for use in LS 261)

2. A set of overlay transparencies and teaching manual -- Basic Cataloging of a Book

   Developed experimentally for self-teaching purposes to show application of techniques in library science work.

3. A set of overlay transparencies and teaching manual -- An Introduction to Data Processing.

   Materials being developed for use in inservice as well as preservice professional education of educational communication and information service personnel requiring introduction to data processing and computer technology. (A series of 20 sub sets is projected.)

4. Segments of a programed text -- Library Usage.

   Developed experimentally by a research assistant, Miss Alice Zacherl, who, as a staff member of the Center for Library and Educational Media Studies acquired basic training in the techniques of programing. The text as originally conceived was intended to orient young people and adults for use of library resources.

5. 8 mm. single concept motion pictures -- "Routines and Processes"

   Materials developed experimentally to assess the feasibility and desirability of using 8 mm. single concept films approaches to individualize instruction in routines and processes related to a variety of specific tasks, e.g. library routines, use of audiovisual equipment, etc.

6. Presentation materials -- "A Listening Center";"Educational Communication Services"; "School Library Materials Center Concept."

   Developed as sets of transparencies to be used with other materials as parts of special presentations to introduce general audiences to various aspects of an educational communication service program.

In summary, in developing initial project materials, major attention was given four types of media. These included television, i.e. videotapes and kinescopes, programed instruction, the 8 mm. single concept film and overlay transpareencies. In each case, materials developed with assistance afforded by project funds were limited prototypes. Some of the sets of transparencies and other materials forwarded to the Office of Education have been completely redone or revised, supported by non-federal funds. A primary objective of the Center for Library and Educational Media Studies is to further develop all materials as necessary for their release and distribution in the field. In developing pilot materials, no materials are released until some preliminary testing has been completed.

It was the original intention of project management to produce one or more "clusters" of materials demonstrating a "systems" approach to instruction in a particular problem area. Such a "package" of materials has not yet been devised, but work on the series pertaining to Information Retrieval and Related Computer Technology is being conducted with this idea in mind.

A fourth outcome of project work involves the general curricular methods and instructional programs developed within the new Graduate School of Library and Information Sciences. The new school offers a program of: (1) team teaching approaches to the planning and administration of course content, (2) opportunities for tutorial instruction, (3) a self-teaching laboratory, (4) instruction in the performance of technical operations and use of technical systems (in preparation), and (5) instructional sequences of varying lengths which do not conform arbitrarily to the present trimester calendar.

The fifth result of project activities is the preliminary development of plans for a new building intended to house the Graduate School of Library and Information Sciences by 1970. The new facility is being designed to create a "college" of educational communication and information sciences.

There have also been numerous related conferences, articles, speeches and consultations as arranged by staff and consultants at the Center. A number of these activities have resulted in separate publications and reports.

Various proposals for research and development activities have been generated at the University of Pittsburgh as a partial consequence of project work. These include:

1. Proposals for the study of educational communication services and personnel within Western Pennsylvania. (A separate contractual study is now being completed for the Office of Education.)

2. In 1963, a study of Instructional Television in Western Pennsylvania was completed for the Metropolitan Pittsburgh Television, Inc. with funds provided by the National Educational Television and Radio Center.

3. Proposals pertaining to new methods of laboratory instruction in library and information services and programed learning approaches to instruction in information retrieval.

4. Design of facilities for improved instructional programs in library education (including educational communication).

5. Design of a total graduate program leading to professional careers in communication and information services.

6. A major demonstration proposal (forwarded to the U.S. Commissioner of Education) to establish a national service program for provision of information and the conduct of special studies concerning the availability and use of instructional media and to support limited laboratory development of new materials useful in educating instructional media specialists. For a copy of this proposal, see Appendix B.

These last proposals represent different stages of development, and not all have received favorable consideration for support by funding agencies. But they do represent the direction development is taking at the University of Pittsburgh.

II

A Summary of Recommendations

In undertaking the present study, the University of Pittsburgh recognized that it had a unique opportunity to render national service as well as to benefit itself in developing a new program of communication and information services which would focus on educational needs. The project was conceived as fitting into a larger program having three main dimensions: service, professional education and research. While implications of the program extended far beyond educational methods as such, initial efforts were to be concerned chiefly with school, college and university needs.

The sections and paragraphs which follow present a series of recommendations applicable at several levels of educational responsibility consistent with the philosophy or rationale stated below. These recommendations relate to thinking done in carrying forward the project reported but extend beyond to include major problems affecting development of the entire field.

Rationale

The technical genius of America promises in the near future to develop electronic and mechanical marvels designed to serve the nation's educational needs and interests in ways far exceeding the capacities of present resources. There are many national factors which demand changes in our educational institutions. These include: the nation's expanding population, the explosion of knowledge, the increasing trends toward automation of work, the need for increased vocational specialization and training, the necessity for all Americans to learn more in less time and the shorter work week resulting in greater amounts of leisure time.

A large number of recent technical innovations including those suggested in the following list will have a major influence in changing educational agencies: Facsimile and data transmission; use of new electronic communication distribution systems (on a 24-hour basis); self-learning aids; cartridge-loading sound recorders and playback units; miniaturization and simplification of all forms of communication equipment; greatly expanded capacity for storage of ideas and information both in micro and in computer tape forms, etc.

Educational communication specialists are responsible for harnessing this battery of communication resources for the benefit of instruction. A rationale identified at Florida Atlantic University justifying formation of a Learning Resources division states the issue properly. This rationale identifies the professional responsibilities for educational communication services within an educational institution: To provide teaching faculty with all media technology service systems which will enhance effective communication of ideas both in a (1) pre-programed and (2) self-programed phase of learning.

Educational communication services at Florida Atlantic are being "grown" and "cultivated" experimentally within a new learning resources complex which knits together the full range of communication and information services provided at the university. These include broadcast facilities, audiovisual and graphic work, individual programed learning and development of a library program using computer services to handle its cataloging chores, its charge-out system and new information retrieval services. At Florida Atlantic, the computer is expected eventually to serve a variety of additional purposes, for example: To assist individualization of instruction linked to learning carrels in the library and in other buildings on the campus; to manage an SDI (selective dissemination interest) program based on reading interest profiles of both faculty and students; to develop routing and special information reference services; to compile any number of special records, files and permuted indexes, to deliver on demand virtually any type of statistics and/or other type of information wanted to assist instruction, research or information activities.

Thinking about the future in very practical terms, professional workers must have the knowledges and skills necessary to insure that educational buildings and services are developed using the new instructional approaches represented in the "learning resources" concept. This calls for placing a premium on individualized learning opportunities not only in learning carrels but in all study areas. Librarians, audiovisual specialist, educational broadcasters and others planning facilities in the future must know about: (1) coaxial cable and audio linkage systems; (2) "random access reservoirs" for materials of various kinds; (3) new centralized distribution facilities for decentralized use of non-book and micro materials; (4) relationships which should exist between buildings and facilities in learning laboratory units; (5) communication production centers; (6) graphic services and other likely innovations which will reflect current trends in educational planning for school and college service.

Many opportunities are developing for a "learning resources" approach in schools and colleges largely due to the work of educational communication personnel (whatever their specific occupational title or level of administrative responsibility). However, the main problem the field faces is a shortage of qualified personnel, as is true of most professional groups serving education. Among those engaged in the study of educational communication service activities, there exists a kind of insularity which impedes individuals from gaining an over-all knowledge of the field. This insular quality or "possessive" concern with the "rituals" and "rites" of a particular area of service are also reflected in the present organization and management of too many professional schools which serve the field.

The present degree of separatism which exists among educational communication and information services and related professional training programs does not serve education well. The instructional and research needs of a modern school or university call for an immediately accessible spectrum of communication resources, including all presentation media and related equipment, devices useful for media analysis, information retrieval and so on. In the interest of improving instruction, coordinating resources, reducing the high cost of duplicating facilities and avoiding inefficiency of management, improved communication and media service arrangements are essential.

A rationale for such arrangements may be obtained by redefining the various professional responsibilities involved. A cluster of six functions represent the chief communication and information service requirements of American schools and colleges (increasingly, these functions must be performed under a single professional management). The six functions are: (1) Continuing research and experimentation on the instructional uses of media and media service arrangements; (2) local adaptation of teaching materials and production of new learning resources taking into account special requirements of specific media as well as the need for "conceptual interlock" (which increasingly must guide preparation of new materials to be used in teaching); (3) distribution of all types of materials and equipment essential to aid the instructional and research efforts of groups and individuals within the school or college communities; (4) counselling and training of individual teachers, students and student groups to identify their requirements and to improve media used; (5) demonstration and display services which would be more adequate than those normally provided in education under typical arrangements (arrangements which so frequently tend to place responsibility for such work with the harried superintendent, principal or university administrator); (6) full use of modern computer technology which can be employed not only to solve problems of an advanced statistical nature and undertake information storage and retrieval work, but also to generate new instructional programs with massive data correlation and synthesis, i.e. a new knowledge by "intellectronic" processes.

Organization of Educational Communication Service Programs

Consistent with the rationale stated above, it is recommended that wherever possible American schools and colleges undertake administratively to cluster their communication and information service units within the framework of a new over-all program. Among such units located on the typical university campus might be a library system, University Press, Book Store, Computation and Data Processing Center, broadcasting unit, audiovisual service agency, and graphics department.

A preliminary organizational structure designed to achieve the coordination proposed could take the form of a "Communication and Information Services Council." On the University campus, such a Council should be composed of the heads of such units as those named above and others having similar or related functions. Early planning work done by the Council could be conducted under supervision of a chairman, director of instructional services, or temporary director of communication and information programs--that individual most directly responsible for supervising educational communication activities.

In schools or colleges just beginning their educational communication service programs a more direct administrative plan might be put into effect. For example, the University of Pittsburgh has recently concentrated responsibility for general management of its communication and information service units under the Vice Chancellor for Planning and General Affairs. These units currently include the Computation and Data Processing Center, the Knowledge

Availability Systems Center, the University libraries and the University Press. For another example, the Director of University Libraries at the University of Pittsburgh is responsible for developing not only basic services for distributing printed materials but also the full range of communication resources represented in audiovisual materials and equipment, educational broadcasting, programed instruction, and the like. This aspect of the library program will be administered in close cooperation with the Learning Research and Development Center, an agency financed with Federal funds to support the study and design of new instructional approaches suitable at many levels of education.

It is also intended that the new Pitt program will coordinate related activities of professional education, research and service units. This coordination may be achieved in part by assigning research and training responsibilities to selected service personnel and by joint planning of needed research and development of new service programs.

Training

The Professional Education of Media Service Personnel sums up the most basic requirements of the field. The recommendations which follow build upon points of view expressed in that publication, and take into account a large number of field interviews as well as a survey of the literature. They also acknowledge the different though related approaches represented in the STEMS project (Seminar for Training of Educational Media Specialists) developed at Hayward, California under the chairmanship of Dr. Robert Hall, and the new directions being taken by media service programs at Michigan State University, Syracuse University and, indeed, at universities across the nation.

The first point to be made is this: There is need for much stronger undergraduate preparation before professional studies are undertaken for educational communication service. To the maximum extent possible, individuals recruited for professional training must have more knowledge of social and behavioral subject matter generally, as well as a strong specialization before entering graduate school. Therefore, much greater emphasis must be placed on anthropology, sociology, social psychology and the place of educational values and functions in society. The professional education program itself must be broadened ultimately to include programs suitable for training technicians and technologists.

The University of Pittsburgh has taken the point of view that full specialization in any one professional area of educational service cannot be completed successfully during a fifth year program. Whether one wishes to specialize by type of educational communication service agency or by performance of a particular function, additional study and work will be required for any management responsibilities. The University of Pittsburgh also holds the belief that greater stress must be placed on internship programs of substantial duration both for pre- and post-professional training wherever such orientation can be encouraged.

Ideally, more programs similar to those developing in several parts of the country in recent years, programs which offer college seniors summer work opportunities in libraries and other educational communication service agencies should be devised. Such internships can serve as valuable recruiting and feeder programs by providing experience relevant to later achievement in formal studies.

To review--stronger, richer undergraduate preparation; specialization in the field only after professional training; a broadening of the total curriculum to include technical training; more emphasis on intersnhip and professional orientation are vital ingredients in preparing personnel for educational communication service.

To cope with the new environments in which educational communication programs are being administered involving expanding service roles and responsibilities, those who manage library functions, educational broadcasting, publishing, and/or provision of technical instructional services must gain more experience and knowledge in fields such as those listed below:

1. Psychology of human learning
2. Communications theory and processes
3. Instructional technology and methods
4. Educational history and philosophy, including understanding of the various philsophic positions and their implications for media and key historical developments in education, especially as these relate to media.
5. Media production skills and operation of related equipment (at least to the degree necessary for the recruitment and supervision of specialists employed to work in the area)
6. Research design and analysis (including familiarity with experimental designs and statistical techniques sufficient to interpret research reports and/or to conduct or supervise modest institutional studies).

At the University of Pittsburgh these areas have been made a part of the Educational Communication Program. (See Appendix A).

Taking into account the massive endeavors of Federal and other governmental agencies as well as research of special libraries and information centers, increasing attention must also be given the automation of educational communication programs and processes. The program being developed at the University of Pittsburgh reflects this in a special sub-curriculum developed for those engaging in full or part-time study of the information sciences. Six courses are currently available to those wishing study in the field: Mechanized Information Retrieval, Special Information Centers, Computers and Information Retrieval, Mathematics and Information Storage and Retrieval and Computer Languages.

As a footnote to these statements offering recommendations for training it must be further recommended that "all-out" efforts be made to implement proposals for shaping new curricular approaches, and for developing, testing and evaluating new instructional and study materials and methods needed to achieve stated program goals. In making such efforts, it is presumed that full attention will be given to relevant instructional methods characterized by the terms self-learning, laboratory work, tutorial studies, internships and field visits, sequencing of training on several levels, cyclic retraining, etc.

Wherever new programs are established they should be conceived to furnish demonstrations or models which can be observed and studied to learn more about how curricular innovations and new personnel relationships may take place in a rapidly changing professional field. While such general observation and study need not be regarded as primary aims of the new training programs, so much useful information may be obtained that the effort is encouraged strongly.

Development and Testing of Materials

Since the field of educational communication is a new synthesis, the instructional materials and literature available within and related to the field are lacking. What is needed to serve the field is the equivalent of a national laboratory which will engage systematically in the production, testing and distribution of needed instructional materials and other resources, after determining priorities for the field. Such a "laboratory" approach would presumably draw upon resources provided by many universities and other educational agencies.

The proposed laboratory program would develop instructional study materials for individual and group use, especially materials which could be used in a variety of curricula. Consultants would be used for theoretical recommendations in the design and production of materials. One example of an effort to combine basic research and practical development and application is an experiment now planned at the University of Pittsburgh for teaching several languages simultaneously at visual recognition levels. The "laboratory" would also test the effectiveness of materials by trying them out with students in actual classes.

Following initial production and testing, laboratory materials would be refined, manufactured and distributed widely, making use of institutes and demonstration conferences to report their availability. Among specific instructional study materials anticipated for development are: basic texts, workbooks and other teaching aids intended for use individually and in groups (eventually under computer guidance), programed materials, aids to learning, information storage and retrieval procedures, multi-lingual teaching resources, overlay transparency presentations utilizing polarized light, 8 mm. single concept films, videotapes, etc. (At the University of Pittsburgh it is hoped

that such a program will develop under the cooperative auspices of the Learning Research and Development Center, the Center for Library and Educational Media Studies, the Knowledge Availability Systems Center, and in cooperation with such non-university organizations as the American Institute for Research, Metropolitan Pittsburgh Television, Inc. et al.)

In summarizing the need for the "national laboratory" proposed, it is important to stress the possible combination of theory and practical application which additional instructional materials would allow. In the past, within the field of educational communication, either technical skills have been emphasized to the exclusion of theory or, more typically since World War II, technical skills have sometimes been neglected to a point where study of principles and theory may have little meaning to students in actual job situations.

In shaping new curricular and service programs, American colleges and schools are initiating more laboratory and tutorial instructional approaches in order to resolve "theory vs. practice" problems. Typical laboratory instructional programs include use of programmed learning aids and equipment; supervised study at "mock" work stations and in learning carrels; observation of technical processes, facilities, resources, etc.; and simulation of field situations through use of slides, motion pictures, film clips and other audio-visual resources. The development of such approaches and prerequisite materials cannot be achieved without a "national laboratory" effort. It is hoped that new legislation (represented in the Elementary and Secondary Education Act) will, under provisions set forth, develop special educational services.

Instructional Media Information Program

The outlook for expenditures for educational communication materials and services during 1965 has been estimated at several billion dollars. At present, the status of developments in the field and specific instructional media needs and "flow" (i.e. patterns of media production, distribution and use in American educational programs)are not known. There are few reliable statistics. No comprehensive single source of information has yet been established. A national information program service is needed.

Attached to this report as Appendix B is a specific proposal advanced by the University of Pittsburgh "To establish a national service program for provision of information and conduct of special studies concerning the availability and use of instructional media and to support limited laboratory development of new materials useful in the preservice and inservice education of instructional media specialists." Whoever may be selected to assume sponsorship of such a national program, the program is needed urgently.

Once created, the program should become a growing reservoir of information which can serve as a kind of neutral "three-way bridge" between publishers and other producers of instructional media, interested governmental agencies and education. The program should maintain a continuing inventory and assessment of all educational communication fields and of related school and college services. A second specific aim of the program would be to serve as a catalyst and, on appropriate occasions, as the direct agent for developing and testing selected materials for inservice and preservice professional training of educational communication service personnel. It might also undertake evaluation of selected instructional media having particular significance to new educational programs. In short, the information activities proposed might well be related to the national laboratory program recommended above.

A National Institute or Academy of Communication

From time to time responsible professional leaders have recommended that a new agency concerned with communication services be established at the Federal level. Like other Federal responsibilities for rendering educational service, governmental responsibility for communication is widely decentralized, so much so that it is often difficult for two or more agencies working on a common problem to get together cooperatively for intelligent planning and support of the operational programs which all agree are needed. For example, this problem was encountered in developing resources nationally for educational use of television. Also, numerous jurisdictional problems arise between the United States Office of Education, the Agency for International Development and various military groups--all of which are more than anxious to work together but often find it difficult because of their organizational structures and specific areas of responsibility.

In order to achieve a greater degree of coordination and cooperative development of the nation's communication resources for education, it is recommended that a National Communications Academy (or institute) be established. This agency should function either as a separate unit or operate under auspices of the United States Commissioner of Education, who must have the necessary responsibility, authority and appropriations assigned legislatively. Included as areas eligible to receive assistance would be programs of adult, vocational and liberalizing education such as manpower retraining, vocational rehabilitation and the job corps programs as well as formal education.

The United States Commissioner of Education has already been assigned informal responsibility for coordinating educational service programs managed by the Federal government to the degree possible. What is now being asked, therefore, is not without precedent and could appropriately be assigned the

Commissioner (who should have cabinet rank). The assignment should involve coordination of all Federal agency programs and projects related to communication and information systems and services within education. It should also cooperate with all public and private organizations having special interests and responsibilities in the field. Among major component Federal programs which should be included within such or related to this new structure would be those interested in library and information services, educational broadcasting, development of instructional technology and audiovisual activities.

This new agency could also serve as a valuable catalyst to related state and local developments and to necessary definition of the field, development of appropriate training programs, identification of significant research needs, etc. The lack of such a focal point is partially responsible for continuing weaknesses in the field.

Media Service Reservoirs

A final recommendation, developed in part as a result of the present project and from observations made nationally in recent years, concerns the establishment of instructional media service "reservoirs" on a regional basis. These would be supported by Federal, state and local agencies and would be managed by educational communications service personnel trained in new Doctoral programs, or the equivalent.

In brief, such reservoirs would be established on a basis appropriate for serving areas of geographic proximity and common industrial development--for instance, southwestern Pennsylvania. They would include the following range of services:

1. Production of specialized instructional materials required by schools and colleges in the region

2. Research and survey work needed to assist educational agencies in planning their own development and instructional media resources

3. Distributive functions aimed at making available throughout the region a full range of instructional media services including broadcast media, motion pictures, etc.

4. Inservice training of teachers and technical assistants in techniques prerequisite to successful operation and maintenance of equipment and data processing. Knowledge of data processing is necessary for handling records essential to the acquisition, storage and distribution of media to institutions located within a region and also to assist development of new instructional and research-based computer approaches. (One model for development of such a system has already been developed and proposed in the special project completed under the auspices of Title VII of the National Defense Education Act under direction of Dr. Jack Tanzman of Long Island, New York.)

In Conclusion

The following is a summary of recommendations of this report which should be seriously considered for improving educational communication services:

1. Development of a new philosophy which will identify educational communication and information services as one professional area.

2. Conception and implementation of advanced training programs designed to prepare managerial personnel for educational communication service agencies as well as specialists who will work within given areas.

3. Establishment of a national training laboratory which will develop, test and distribute instructional resources for inservice and preservice educational programs in educational communication fields.

4. Support of a national information program concerning instructional media.

5. Creation of a National Communications Academy or institute to coordinate research and training and to support programs relating to development of educational communication services.

6. Development of instructional media service "reservoirs" on a regional basis (as recommended in the publication entitled Instructional Television in Western Pennsylvania). *

The task of managing the availability and flow of ideas and information is vital to our society. This is the business of communication and information service personnel and teachers. The project reported and the related recommendations contained herein and in the companion volume, The Professional Education of Media Service Personnel have been addressed to this task.

* Instructional Television in Western Pennsylvania, Published by the Center for...Media Studies, University of Pittsburgh. Distributed by University of Pittsburgh Book Center. (Editor) C. Walter Stone July, 1964.

APPENDIX C

Final Budget Summary

Account: Office of Education 903-2

As of: April 15, 1965

Object	Plan of Operation	Obligations to date	Projected Obligations to 8/31/64	Balance
Salaries	7,092.00	7,741.37	.00	-649.37
Fringe Benefits	367.00	464.48	.00	- 97.48
Consultants	6,550.00	6,000.00	.00	550.00
Supplies	1,500.00	1,712.10	.00	-212.10
Travel	3,500.00	3,999.92	.00	-499.92
Production Demo.	3,091.00	2,488.37	.00	602.63
Communications	400.00	352.70	.00	47.30
Miscel. Supplies	2,500.00	2,181.50	.00	318.50
Indirect Costs	3,750.00	3,741.07	1,038.03	8.93
TOTALS	28,750.00	28,681.51	1,038.03	68.49